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Producer Processing of Turkeys

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INTRODUCTION

Direct marketing of dressed turkeys by Ohio producers is approximately a $4 million business. While the number of direct marketers has been declining, the numbers of turkeys sold directly has been increasing.[2]

Ohio is unique among the North Central States. It is the only state in the region with a combination of a population of more than 10 million and less than 20 percent of it in one metropolitan area. Illinois has a population of more than 10 million but half of it is in the Chicago area. Ohio has seven metropolitan areas of more than one-half million and many smaller population centers. This creates a greater opportunity for direct marketing than in other states of the region.

OBJECTIVES OF STUDY

The objectives of this study were to determine:

1. Special situations and circumstances needed for producer-processing of turkeys. What are they and which ones favor an increase or decrease in producer-processing?
2. The extent of integration of producer-processors and how integration is likely to affect their competitive position.
3. In-plant processing costs of producer-processors compared to in-plant costs of large processors.
4. Are market outlets of producer-processors changing? If so, how will these changes affect producer-processors?
5. Variations in retail and wholesale prices received by producer-processors and reasons for these variations.
6. Future plans of producer-processors and how these plans compare to general findings of the study.

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[1]This study is a part of Regional Research Project NCM-39, Improving the Efficiency of Turkey Marketing in the North Central States. Other states and agencies involved in studies of other stages in the economic processes of the North Central Region turkey industry include Indiana, Iowa, Kansas, Michigan, Missouri, Wisconsin, and the Economic Research Service and Farmer Cooperative Service of the U. S. Department of Agriculture.

[2]See Clayton, P. C., W. R. Luckham, and R. E. Cray. 1959. Marketing turkeys in Ohio. Ohio Agri. Exp. Sta., Res. Circ. 72; and Moyer, D. D. and R. L. Baker. 1963. Sales of Ohio turkeys to first buyers. Ohio Agri. Exp. Sta., Res. Circ. 115.

METHODS USED IN STUDY

Three methods were used to obtain information. They were:

- A mail survey of 30 producers who had previously been studied in 1962.
- Personal interviews with 17 of these 30 producers.
- Time studies of six of the producer-processors.

The producers were selected to include: direct marketers of more than 1,000 turkeys per year, a wide geographic distribution, and those willing to cooperate fully in the study as indicated by their answers in the 1962 study.

BACKGROUND INFORMATION ON PRODUCER-PROCESSORS

Of the 30 questionnaires mailed to producers, 27 were returned. Two of these 27 had discontinued turkey growing. The 25 remaining producers both grew and processed more turkeys in 1966 than the 27 had in 1961 (Table 1).

Of the 25 producers remaining in business in 1966, 18 had increased the number raised since 1961 and 17 had increased the number of turkeys processed.

Twelve of the 25 producers processed fewer than 10,000 turkeys in 1966. Six producers processed between 10,000 and 19,999 turkeys, six processed between 20,000 and 29,999, and one processed more than 30,000 turkeys.

Of the 17 processors selected for further study, four processed fewer than 10,000 birds and froze less than 50% of the turkeys processed. Five producers processed between 10,000 and 30,000 birds and froze less than 50% of them. Three producers processed fewer than 10,000 head but froze half or more of them. Four froze more than half of their birds and processed between 10,000 and 30,000 head. One producer processed more than 30,000 turkeys and froze more than half of them.

At least one producer in each of the first four categories was selected for the time study.

TABLE 1.—Number of Turkeys Raised and Processed, Number and Percentage Increase, and Average Flock Size, Producer-Processors, 1961 and 1966.*

	1961	1966	Number Increase	Percentage Increase
No. raised	443,500	547,300	103,800	23.4
No. processed	310,800	371,000	60,200	19.4
Av. flock size	16,426	21,892	5,466	33.3

*27 producers in 1961, 25 in 1966.

TABLE 2.—Turkey Meat Production Stages and Number of Producers Engaged in Each Stage, 1966.

Stage of Production	Number of Producers
1. Grain growing	10
2. Feed grinding and mixing	10
3. Hatching egg operation	4
4. Hatching	0
5. Turkey growing	17
6. Turkey processing	16
7. Further processing	11
8. Wholesale distribution	16
9. Retail distribution	15

Operations of Sample Producers

The production of turkey meat was divided into nine major stages. These stages and the extent of integration by the sample producers are shown in Table 2.

The typical operation consisted of five to seven production stages. All grew turkeys. All either processed their own turkeys or had them processed for them and most were involved in both wholesale and retail distribution (Table 2). None hatched turkey eggs.

The turkey growing operation might be considered an extension of the grain growing stage since 10 turkey growers were also grain growers. The least integrated operation in the group consisted of three stages. This producer grew turkeys and retailed and wholesaled them. His turkeys were custom dressed by a major processor. Two of the sample producers included all stages listed in Table 2 except hatching poults.

Data in Table 3 describe the individual operations. As can be seen, the data are arranged in order of operator's age. The most significant thing about the data in Table 3 is the wide range in each of the factors listed. The most common number of turkeys raised in 1966 was approximately 20,000.

Turkeys were an important source of cash income to each producer and the most important source to most of them. Farms ranged from one of 35 acres near large population centers to one of 1,000 acres of excellent farming land in a relatively low population density area.

Other Enterprises

Six of the ten turkey producers grew more grain than was needed for feeding their turkeys. So this part of their overall operation became supplementary to the turkey operation rather than part of the integrative process. In addition, as shown in Table 4, other supplemen-

tary enterprises such as hog production and dairy farming were included in the operations. Part of the grain growing operation could be considered complementary to the turkey operation. This was also true of beef cattle operations. The producers with beef cattle ranged their turkeys on the beef pasture, thus fertilizing the pastures and increasing the number of beef cattle the pastures would carry.

TABLE 3.—Age of Turkey Growers, Number of Turkeys Raised, Number of Stages of Integration, Size of Farm (Acres), and Percentage of Gross Farm Income Produced by Turkeys for Each Producer, 1966.

Operator's Age in Years	Number Raised 1966	No. of Stages of Integration	Percentage of Gross Farm Income from Turkeys	Acres in Farm
31	12,000	7	90	120
36	80,000	5	100	35
39	24,000	5	65	480
41	50,000	5	90	310
45	4,500	7	50	225
45	5,300	5	75	240
46	15,000	6	50	180
47	30,000	7	90	400
48	16,000	8	80	100
49	20,000	8	90	280
50	5,000	6	75	140
51	20,000	3	60	300
52	8,500	4	50	500
60	18,000	5	85	186
60	28,500	7	25	1,000
60	18,000	7	80	390
85	5,500	5	33	204
MEAN				
50	21,194	6	70	299

TABLE 4.—Other Enterprises on Producers' Farms and Number of Producers Engaged in Each Enterprise, 1966.

Enterprises	Number of Producers
Grain production (in excess of needs for turkeys)	6
Beef cattle	6
Hog production	2
Dairy farming	2
Fruit production	1
Vegetable production	1
Other poultry enterprises	2

Two producers raised and processed turkeys because they could sell them along with eggs, broilers, and ducks which they had been producing and processing before they got into the turkey business. Thus, although the operations of the individual producer-processors were small compared to many businesses, they were involved in both vertical and conglomerate integration.

Development of the Turkey Enterprise

The sample producers had started their turkey operation in these three basic manners:

1. Seven began and have continued farming with turkeys as their main enterprise while occasionally adding complementary and/or supplementary enterprises.
2. Four began farming with enterprises other than turkeys and have continued these as their main enterprises while adding turkeys as a complementary or supplementary enterprise.
3. Six began farming in enterprises other than turkeys but gradually shifted emphasis until turkeys were their main enterprise.

Age and Experience of Operators

No apparent relationship existed between operator's age and the number of turkeys raised and processed or between the age of the operator and the extent of integration.

All of the producers had been raising turkeys for more than 10 years. Most started processing turkeys shortly after they started raising them.

Fourteen of the 17 processed more turkeys in 1966 than in 1961. The number processed increased from 185,500 in 1961 to 286,500 in 1966.

Location

Thirteen producers were located within 25 miles of a city of 100,000 or more population. Four had developed substantial volumes by selling in several smaller nearby cities.

PROCESSING COSTS

Estimates of processing costs were obtained from interviews with the producer-processors and by extensions of timed operations.

Capital Investment

Most processing facilities consisted of a receiving and killing room; eviscerating, packing, and sales rooms; a holding cooler; and a freezer. Some buildings were built specifically for turkey processing. Others had been converted from other uses to processing plants. The wide variation in investment per square foot indicated in Table 5 is more

closely related to the type of building than the differences in ages of buildings.

In most instances, the equipment for killing and eviscerating had been purchased second hand, one or two pieces at a time. Consequently, equipment represented an accumulation of several years. Thirteen producers used some type of eviscerating line and three eviscerated birds on tables.

Thirteen producers had freezing and frozen storage facilities. Ten of the 13 freezing facilities had been constructed within the last 6 years. Producers averaged $1 invested in freezing and frozen storage equipment for approximately 5 lb. of boxed turkey freezing and storage capacity (Table 6).

TABLE 5.—Dollar Investment in Processing Building per Square Foot, Producer Volume Group, Age of Processing Building in Years, Investment in Processing Equipment, and Total Investment in Building and Processing Equipment for 16 Producers, 1966.

Investment in Processing Building per Sq. Ft.*, †	Producer Volume Group‡	Age of Processing Building in Years	Investment in Processing Equipment	Investment in Building and Processing Equipment**, †
$6.85	1	4	$15,000	$55,000
6.25	3	10	4,000	19,000
6.11	2	7	6,000	17,000
4.75	1	12	5,000	15,000
4.40	3	16	6,000	21,000
4.15	1	1	40,000	90,000
4.00	3	18	5,000	19,000
3.90	2	19	2,000	6,000
3.05	1	4	2,000	14,000
2.50	3	2	900	3,950
2.30	2	14	6,000	14,000
2.22	1	7	30,000	75,000
2.00	1	23	5,000	12,000
1.75	3	2	2,000	5,500
1.70	3	17	5,000	10,500
1.55	3	14	2,000	8,100
MEAN				
$3.59	16,853	10.6	$ 8,494	$24,065

*Does not include cooling, freezing, and cold storage facilities.

**Includes cooling and temporary holding equipment but not freezing and frozen storage equipment.

†The dollar investment figures listed are the investment at the time of construction or purchase.

‡Number processed: 1—20,000 and over; 2—10,000 to 19,999; 3—under 10,000.

Capacity and Utilization

Both processing plant capacity and its utilization varied widely among the producer-processors (Table 7). In general, however, the total number of birds processed was closely associated with the capacity per hour.

Plants were operated an average of 51 days during the year for about 8½ hours per day. This included preparation and clean-up time. Assuming 240 working days per year to be full capacity, the plants were operated at about 21% of capacity.

There was a wide variation in the storage capacity of plants. Five producer-processors used outside commercial frozen storage in addition to their own facilities.

Labor

Most of the producer-processors indicated problems in obtaining labor for processing plant operation. These labor problems were basically the result of:

1. The location of the producer-processors near large cities and

TABLE 6.—Dollar Investment in and Capacities of Freezing and Frozen Storage Equipment, Producer Volume Group, and Ratio of Investment to Capacity for 13 Producers, 1966.*

Investment in Equipment	Producer Volume Group†	Capacity of Equipment (Pounds)‡	Ratio of Investment to Capacity
$75,000	1	420,000	1:5.6
65,000	1**	350,000	1:5.4
25,000	1	125,000	1:5.0
25,000	1	80,000	1:3.2
24,000	2	120,000	1:5.0
12,000	2	60,000	1:5.0
10,000	3	40,000	1:4.0
10,000	2	36,000	1:3.6
8,000	3	40,000	1:5.0
6,000	3	30,000	1:5.0
4,000	3	22,000	1:5.5
2,000	1	12,000	1:6.0
2,000	3	9,500	1:4.8
MEAN			
$20,615	16,853	103,423	1:4.9

*Four producers did not have freezing facilities on their farms.

†Number processed: 1—20,000 and over; 2—10,000 to 19,999; 3—under 10,000.

‡Capacity for individually boxed turkeys.

**This producer had his turkeys custom dressed but used his own freezing facilities.

competition with non-farm industries for labor. As indicated in Table 8, wages were relatively low.

Three producers were located in areas where religion and other sociological factors tied people to the soil and they indicated no difficulty obtaining the quantity of labor needed, even at the relatively low wages.

2. The short operating period was another major factor in obtaining labor. The plants employed an average of 6 men and 10 women during the holiday season. This highly seasonal nature of the direct marketing operations enlarged the problem of obtaining male labor, particularly. Some producer-processors used high school and college students for most of their male labor requirements. Female labor was more available than male labor but was not abundant.

TABLE 7.—Producer Volume Group, Capacities per Hour of 16 Producer-Processors for Heavy Hens, Heavy Toms, and Light Hens, Number of Days Plants Operated per Year, and Percentage of Total Capacities Utilized, 1966.

Producer Volume Group*	Number of Heavy Hens per Hour	Number of Heavy Toms per Hour	Number of Light Hens per Hour	Number of Days Plant Operated per Year†	Percentage of Total Capacity Utilized‡
1	300	250	360	60	25
1**	270	200	350	140	58
1	230	120	250	40	17
1	200	160	235	30	13
3	135	80	145	25	10
1	120	75	140	100	42
2	110	75	160	75	31
3	100	75	125	30	13
2	100	70	120	40	17
3	85	60	85	40	17
1	70	45	85	60	25
3	70	40	70	25	10
3	65	45	75	10	4
2	65	35	80	125	53
3	50	40	60	8	3
3	45	35	50	12	5
Mean 16,853	126	88	149	51	21

*Number processed: 1—20,000 and over; 2—10,000 to 19,999; 3—under 10,000.

†Any part of half-day worked was counted as a full day. Thus the percentage of capacity utilized is actually less than the values given.

‡Full (100%) capacity assumed to be 240 full working days (8 hours) per year.

**This producer was basically a processor. He processed his own birds during the holiday season.

Labor turnover was a problem, with most of the labor turning over from season to season. Four producers indicated that their labor turned over about twice in a single season. This resulted in a continuous training and retraining program and decreased labor efficiency.

3. Jobs necessary for turkey processing are less desirable than most farm or non-farm jobs. Many people will not work in a processing plant. This factor is likely to become more important as working conditions in other occupations improve.

Time Studies

Average labor times per bird were calculated from time studies on six producer-processor operations. The capacities per hour for these plants varied from 50 to 230 heavy hens. Ten time trials were taken of each operation performed on the turkey. An average time was then computed after an allowance was made for plant preparation, clean-up, and other miscellaneous jobs.

TABLE 8.—Total Number of People Employed in Processing Plants, Producer Volume Group, Number of Men and Women Employed in Plants, and Wage Rates Paid by 16 Producers, 1966.

Total No. of People Employed	Producer Volume Group*	Number of Men Employed	Hourly Rate Paid Men†	Number of Women Employed	Hourly Rate Paid Women†
25	1	10	$1.35	15	$1.25
25	2	5	1.50	20	1.50
24	1	12	1.50	12	1.50
20	1	8	1.50	12	1.25
20	3	13	1.30	7	1.30
20	2	5	1.75	15	1.30
18	1	5	1.60	13	1.30
16	3	12	1.35	4	1.25
14	3	6	1.35	8	1.35
14	3	4	1.25	10	1.25
12	3	4	1.50	8	1.25
10	2	5	1.50	5	1.25
10	1	3	1.35	7	1.35
9	3	3	1.60	6	1.35
9	3	1	1.50	8	1.40
7	1	3	1.50	4	1.25
Mean					
16	16,853	6	$1.46	10	$1.32

*Number processed: 1—20,000 and over; 2—10,000 to 19,999; 3—under 10,000.
†Includes employees' Social Security. No other fringe benefits were paid.

The operations generally performed and timed were:

1. Take turkey from cage, put in killing funnel or hang on killing line
2. Kill
3. Put in scalder
4. Remove from scalder
5. Remove feet and pull out main wing and tail feathers
6. Put in picker
7. Remove from picker, hang on line, remove oil gland
8. Pin
9. Slit neck, remove crop and windpipe
10. Cut, open
11. Vent, draw
12. Remove heart, liver, and rinse off
13. Remove gizzard, cut open, clean, rinse
14. Remove lungs, rinse out carcass
15. Remove head, cut and stuff neck
16. Tuck, truss, put in tank
17. Remove from tank, wrap and stuff giblets
18. Grade
19. Bag
20. Vacuum, check
21. Weigh and mark
22. Box
23. Transport and load into freezer or cooler

The steps listed could not always be followed exactly because of variations in plant operations. The weighted average labor cost of bagged and boxed turkey was computed to be 1.18 cents per lb. Labor costs as well as other processing costs were calculated for heavy young hens and toms combined, with an average 16.0 lb. eviscerated weight. The wage rates for owner and family personnel were assumed to be the same as those paid hired labor. Turkeys sold in fresh-dressed form were bagged in nonshrinkable bags and not boxed. The average labor cost for the fresh-dressed birds was computed to be 1.11 cents per lb.

Packaging, Advertising, and Miscellaneous Costs

The average cost of shrinkable bags, including sealing, clamps, and allowing a 1% loss, was 1.0 cent per lb. The average cost of nonshrinkable plastic bags used for fresh-dressed birds was 0.30 cent per lb. Individual boxes, which were used almost entirely for frozen birds, cost an average of 1.0 cent per lb.

Producer estimates of advertising costs averaged 0.20 cent per lb. Miscellaneous items such as office supplies, organization dues, contributions, professional services, and other items averaged 0.10 cent per lb.

Utility, Freezing, and Storage Costs

Telephone, heat, water, and electricity costs averaged 0.45 cent per lb. Ice, when purchased, cost an average of 0.10 cent per lb. of turkey.

Yearly freezer depreciation, repairs, and maintenance were computed at 7% of investment and 0.26 cent per lb. was used for electricity.[3] This resulted in a total cost of freezing and holding for 4 months of 1.31 cents per lb. of turkey. When commercial facilities were used for the same period, the cost was 2.17 cents per lb. The combined weighted average cost of farm and commercial freezing and storage was 1.48 cents per lb.

Fixed Overhead Costs

Average costs of general repair and maintenance based on estimates given by producers averaged 0.16 cent per lb. Taxes, insurance, and workmen's compensation averaged 0.23 cent per lb.

Thirteen producers had completely paid for their processing facilities. They were charged an interest opportunity cost of 5% on the original investment. This cost and the interest paid by three other producers averaged 0.54 cent per lb. of turkey.

Yearly depreciation on buildings was computed at 3% and processing equipment depreciation, including obsolescence, at 10%. The resulting depreciation cost averaged 0.57 cent per lb.

A summary of all in-plant processing cost estimates is given in Table 9.

Cost Comparisons

In 1961, Rogers and Rinear studied in-plant costs of about 25 processors with capacities ranging from 200 to 2000 heavy young hens per hour.[4] The basic methods of computing costs by Rogers and Rinear were used in this study. A comparison of costs in this study and the study of larger plants is shown in Table 10.

Wage rates paid by the processors in the Rogers and Rinear study ranged from $1.10 to $2.63 per hour. The producer-processors included in this study generally paid relatively low wages. They did not employ managerial or clerical help. The producer-processor and members of his family served as repairmen, salesmen, labor supervisors, and at

[3]Electricity costs estimated from BTU requirements given by Pflug, I. J. June 1957. Immersion freezing found to improve poultry appearance. Frosted Food Field.

[4]Rogers, G. B and E. H. Rinear. August 1961. Costs and efficiency in turkey processing plants. Economic Research Service, U.S.D.A., p 6.

TABLE 9.—Average In-Plant Processing Costs per Pound (Eviscerated Weight) of 16 Producer-Processors,* for Fresh and Frozen Heavy Young Hens and Toms Combined, 1966 (Cents per Pound).

Item		Frozen†		Fresh‡
Wages and salaries:		1.18		1.11
Packaging, supplies, misc.:				
Bags	1.00		0.30	
Boxes	1.00		—	
Advertising	0.20		0.20	
Miscellaneous	0.10		0.10	
		2.30		0.60
Utilities, freezing, and storage:				
Utilities	0.45		0.45	
Ice	0.10		0.10	
Freezing and storage	1.48		—	
		2.03		0.55
Fixed overhead:				
Repairs and maintenance	0.16		0.16	
Taxes and insurance	0.23		0.23	
Interest	0.54		0.54	
Depreciation	0.57		0.57	
		1.50		1.50
Total		7.01		3.76

*Average eviscerated weight of hens and toms combined was assumed to be 16.0 lb., also assumes no frozen weight loss.

†Frozen in shrinkable bag, individual box, and stored for an average of 4 months.

‡Fresh bird in non-shrinkable bag, not boxed.

TABLE 10.—In-Plant Processing Costs of Producer-Processors Compared to In-Plant Costs of Large Processors for Heavy Young Hens and Toms Combined (Cents per Pound).

Item	Producer-Processors		Large Processors*
	Fresh	Frozen	Frozen
Wages and salaries	1.11	1.18	2.27
Packaging, supplies, misc.	0.60	2.30	1.92
Utilities, freezing, storage	0.55	2.03	0.80
Fixed overhead	1.50	1.50	0.85
Total costs	3.76	7.01	5.84
Average weight per head (lb.)	16.0	16.0	15.37

*Roger, G. B. and E. H. Rinear. August 1961. Costs and efficiency in turkey processing plants. Economic Research Service, U.S.D.A., p. 10.

times worked on the killing and eviscerating lines. Thus, the lower costs of producer-processors as shown in Table 10 were expected. No allowance was made for the increased wage rates which have occurred since 1961 nor for improvements in processing operations of large processors. However, it is likely that per unit costs have increased since 1961.

High volume operation, assuming everything else is equal, is generally expected to lower per unit costs of supplies, services, and overhead. The producer-processors in this study dressed a relatively small number of turkeys and utilized only about one-fifth of their potential capacity in 1966. Nevertheless, as shown in Table 10, the costs averaged lower for the producer-processors selling on a fresh-dressed basis than the average costs for large processors in the USDA study. However, the computations for large processors were based on frozen turkeys.

Costs of Further Processing

Time trials of further processing were made at one plant. The average time to completely debone a 12 to 14 lb. turkey was 6 to 7 minutes. An additional 1 to 1.5 minutes was required to roll and bag the breast and bag the rest of the turkey. These times were higly variable and varied with size of bird and skill of the operator.

Costs of Offal and Feather Disposal

All producers spread feathers on their fields for fertilizer. Three producers sold offal to fertilizer plants. Three gave it to fertilizer plants and 10 were forced to spread offal on their fields because no other outlets were available to them. Some fertilizing value resulted but it is also possible that sanitary problems could be created as a result of spreading offal on fields. No attempt was made to obtain precise costs of spreading vs. costs of offal being picked up by fertilizer plants.

MARKET OUTLETS AND FORMS OF TURKEYS SOLD

The demands of the purchaser of producer-processed turkeys varied with the type of clientele to whom the producer-processor catered. Much of the demand depended upon a differentiated product in the eyes of the purchaser, either as a result of services performed or the kind of bird marketed.

Outlets for Turkeys

The quantity and proportion of the total turkeys sold increased from 1961 to 1966 to restaurants, retail grocers, institutions, and as gifts (Table 11). The numbers sold to consumers remained about the same but the proportion of total sales declined. Sales to wholesale distributors declined both in numbers and in proportion of the total.

TABLE 11.—Number and Percentage of Dressed Turkeys Sold to Various Outlets and Number of Producers Selling to Each Outlet for 17 Producer-Processors Combined, 1961 and 1966.

Outlet	1961*			1966		
	Number Sold to Outlet	Percentage Sold to Outlet	Number of Producers Selling to Outlet	Number Sold to Outlet	Percentage Sold to Outlet	Number of Producers Selling to Outlet
Consumer	40,545	21.9	16	40,300	14.0	15
Restaurant	22,691	12.2	9	49,175	17.2	15
Retail grocer	62,726	33.8	14	107,525	37.5	16
Institution	9,292	5.0	9	27,875	9.7	9
Gifts	19,336	10.4	10	44,825	15.7	16
Wholesale distributor	30,910	16.7	4	16,800	5.9	4
Total	185,500	100.0	—	286,500	100.0	—

*Source: Data on numbers sold to specific outlets in 1961 were available from Moyer's research schedules for 15 producers. Number sold to each outlet for the two remaining producers was computed by using their total number processed in 1961 and applying the percentages sold to each outlet in 1966.

Most outlets were located within 40 miles of the producer's plant. Sales to grocers were mostly to small independents.

Strain, Sex, and Age of Turkeys Processed

The producers generally catered to clientele who wanted a high quality, well-dressed bird.

Fifteen of them raised and processed all white turkeys. Two raised and processed all bronze turkeys. Ten of the 15 using all white birds had made the change since 1961. The major reasons given for switching completely to white turkeys were ease of dressing, better dressed appearance, and better consumer acceptance. The two producers using bronze turkeys had switched to whites around 1961 but had recently switched back to bronze. They favored bronze because of their belief that bronze turkeys had better body conformation and grew faster.

Twelve producers processed all straight-run turkeys. Three processed more toms than hens and two processed more hens than toms. The three producers who processed mostly toms sold most of them frozen to restaurants, hospitals, schools, and other institutions. The two producers using more hens sold them primarily as fresh-dressed at the holidays or frozen as factory gifts.

Most turkeys were processed between 20 to 25 weeks of age. Some, however, processed large toms at 26 to 30 weeks and sold them to restaurants and institutions. They received a premium price but farm production costs per pound were higher for these birds.

Most producers said that in order to get well-finished birds, they dressed them 1 to 2 weeks later than large processors. Data in Table 12 demonstrate the inverse relationship between age and feed efficiency in turkeys. To produce a higher quality product in the eyes of the consumer, the producer-processors were increasing production costs.

TABLE 12.—Interval Feed Costs per Pound of Gain for Large White Turkeys.*

Toms		Hens	
Age Interval (Weeks)	Cost/Lb. Gain (Cents)	Age Interval (Weeks)	Cost/Lb. Gain (Cents)
12-16	13.70	12-16	14.45
16-20	16.66	16-20	18.46
20-24	17.23	20-21	24.58
24-25	27.17	21-22	27.22
25-26	28.81	22-23	35.71

*Feed cost figured at cost of ingredients plus mixing.

Source: Touchburn, S. P. and V. D. Chamberlin. Nov. 1966. Feeding schedules for growing turkeys. OARDC, Res. Summary 17, Turkey Research-1966, pp. 37-38.

Forms of Turkeys Sold

Although producer-processors are traditionally considered as fresh-dressed sellers, half of the dressed turkeys sold by the 17 producers in 1966 were frozen. Fourteen of the producers indicated that the year-round demand for turkeys had increased and that they were freezing to meet this increased demand. The proportion of turkeys frozen ranged from less than 10 to 100 percent. While it was not universally true, there was a tendency for the proportion of turkeys frozen to vary directly with the number of turkeys processed. However, three producers who processed 5000 or fewer turkeys froze one-half or more of their birds and three producers who processed 20,000 or more birds froze well under half of them.

Frozen turkeys were sold primarily to restaurants, retail grocers, institutions, and as factory gifts. It was previously pointed out that the increases in numbers of turkeys sold had occurred in these types of outlets. Therefore, it must be concluded that a major reason for increased sales were freezing of turkeys.

Although sales of turkeys as factory gifts had increased, this outlet was not looked upon with long-run favor by many producers. They had difficulty meeting the exact sizes requested by this type outlet, as well as receiving strong price competition from larger processors.

Fresh-dressed turkeys were sold mostly to consumers, retail grocers, and wholesale distributors. The retail grocer group was the only one of these three to which sales had increased since 1961. Increased sales to retailers were due to increases in both the numbers of fresh-dressed and frozen turkeys sold to them.

All producers indicated a definite increase in the demand for cut-up and further-processed turkey meat. In 1966, this group cut up and further processed about one-eighth of their turkeys. Eleven of the 17 producer-processors were doing some further processing. The proportion of sales for these 11 in further-processed form ranged from about 1% to 30% of their total sales.

The USDA reports of poultry slaughtered under Federal inspection show that the quantity of turkeys sold in the further-processed form has been increasing nationally for some time. In 1962, about one-sixth of the volume slaughtered under Federal inspection in the U. S. was certified for use in further-processed or cut-up items. In 1966, this proportion reached nearly one-third of the total turkeys. However, in 1967, the proportion of further-processed and cut-up turkeys under Federal inspection dropped to 26 percent.

Turkey rolls were the main further-processed item sold by the producer-processors. They were sold mostly to restaurants and institutional

users. Other further-processed items included smoked whole turkey, canned turkey, cooked or raw rolls, cooked sandwich meat, roasts, and steaks. Cut-up items included breasts with the bone in or boneless, thighs, drumsticks, backs, necks, wings, and giblets. These parts were generally bagged and sold either fresh or frozen.

The six producers who did no further processing said they had outlets for breasts and rolls but could not sell the rest of the turkey. Therefore, they sold all of their birds in the whole body form. The problem of finding outlets for the rest of the turkey also limited the extent of further processing for most of the other producers. Several of the larger producers had developed outlets for wings, necks, backs, and drumsticks by selling them to large restaurants. This outlet, however, is not available to most smaller producers because of their inability to regularly provide the quantities desired.

COSTS OF SELLING AND DELIVERY

Advertising costs averaged about 0.2 cent per lb. of turkey processed. Most advertising was aimed at selling fresh-dressed birds during the holiday season. Methods of advertising included newspaper, radio, billboards, pamphlets on cooking methods placed in or on the box or bag, and posters in stores. The major selling method on which these producers depended was word of mouth from a customer to a prospective customer.

Despite the fact that these producer-processors served as wholesale distributors, jobbers, or retailers, a relatively small amount of time was spent in selling. Fourteen of the producers indicated they spent less than 4 man days a year selling, with most of it done by telephone. On the other end of the scale, two producers spent about 200 days a year selling turkeys.

These estimates do not include the time spent in actually making a transaction. Producer estimates indicated that the labor costs for on-farm sales varied from 2 to 8 cents per turkey.

Most of these producers had apparently built a local reputation for producing a high quality, well-finished, and well-dressed bird. Turkeys were sold to about the same outlets year after year. Additions came as a result of satisfied customers informing prospective customers.

About two-thirds of the turkeys were delivered to customers, with the remainder sold at the farm. The trend was toward delivering more turkeys. This, of course, can be derived from the changing pattern of sales. Almost all of the frozen turkeys were delivered by the processor.

Farm sales were usually made from the sales room in the processing plant only immediately before Thanksgiving and Christmas. De-

liveries were generally made in small trucks owned by the producer. The number delivered per stop varied greatly with type of outlet and time of year. Deliveries to some retail grocers and particularly to factories as gifts involved relatively large numbers per stop. As few as two birds per stop were delivered to institutional customers. Some of the producers indicated that they had acquired some outlets because they would deliver a small number of turkeys weekly or semi-weekly and large distributors were not interested in this business. Three producers indicated that they delivered individual birds but made an extra charge for this service.

Estimates of distance traveled, time consumed, and delivery costs per turkey are shown in Table 13. As can be seen, there was a wide range of distances traveled per turkey delivered. There was a close relationship between distance traveled and time used per turkey delivered. There was a tendency for distance traveled per turkey delivered to increase as the number of turkeys delivered increased. This implies that larger volume producers sold to more outlets rather than selling larger numbers to each outlet.

TABLE 13.—Number of Turkeys Delivered, Distance Traveled, Time Used, and Estimated Cost per Turkey Delivered for 14 Producer-Processors, 1966.*

Number Delivered†	Distance Traveled per Turkey	Time Consumed per Turkey	Delivery Cost per Turkey‡
	(Miles)	(Minutes)	(Cents)
f	2.22	3.47	42.08
d	1.60	5.76	38.40
f	1.48	3.70	34.40
f	1.43	4.46	32.64
d	0.83	3.20	25.60
f	0.55	2.00	15.04
f	0.63	1.52	13.44
e	0.32	2.48	13.12
e	0.33	1.60	8.96
e	0.30	0.86	8.80
d	0.17	1.03	7.68
e	0.10	0.75	5.12
d	0.20	0.84	5.12
e	0.06	0.27	1.44
Mean	0.73	2.28	17.99

*Delivery costs were obtained from 14 of the 17 producers.

†Number delivered: f—more than 10,000; e—3,000 to 10,000; d—less than 3,000.

‡Cost of hauling was figured at 15 cents per mile and the wage rates paid by the specific producer were used in figuring labor costs.

Most of the producers with high delivery costs per turkey delivered 10,000 or more birds per year (Table 13). These producers delivered a high proportion of frozen turkeys to restaurants and institutions. The producers with low delivery costs delivered mainly fresh-dressed birds to retailers or frozen birds to factories during the holiday season. Precise data were not obtained on the size of turkeys delivered but since many of the birds delivered to the restaurants and other institutions were large toms, the delivery costs per pound were lower than those implied in Table 13.

SELLING PRICES

Methods of arriving at selling prices and prices varied widely. Price estimates for top quality birds weighing 17 lb. or less ranged from 45 to 59 cents per lb. for retail sales, while those for birds over 17 lb. ranged from 43 to 57 cents per lb. (Table 14). Since there was less independence in arriving at wholesale prices, variation in these prices was slightly less, ranging from 40 to 52 cents per lb. for birds 17 lb. or less and from 35 to 48 cents for birds weighing more than 17 lb.

TABLE 14.—Estimated Wholesale and Retail Prices per Pound for Whole Turkeys During the Holiday Season for 17 Producer-Processors, 1966 (Cents per Pound).

Hens (17 lb. and under)		Toms (over 17 lb.)	
Retail	Wholesale	Retail	Wholesale
59	50	49	43
59	49	49	39
59	46	43	36
58	52	52	46
57	—	57	—
55	47	45	38
55	42	50	39
50	50	45	45
50	44	45	40
49	45	45	39
49	42	39	38
48	48	48	48
48	40	43	35
48	43	43	37
45	45	43	43
—	49	—	45
—	42	—	39
Mean			
52.6	45.7	46.4	40.3

Combinations of prices charged by individual producers varied widely. For instance, the difference between retail prices charged for birds of 17 lb. or less compared to those weighing more than 17 lb. ranged from 0 to 16 cents per lb. Wholesale prices, which refer to all sales other than those directly to consumers, varied somewhat less between the two weight categories than prices to consumers.

Eleven producers said they held wholesale prices constant throughout the holiday season. Six of these held wholesale prices constant throughout the year and the other five varied prices with market prices the rest of the year. Five producers said their wholesale prices varied throughout the year but were slightly higher during the holidays, especially at Christmas.

In determining the prices of birds sold to restaurants, institutions, and factories, producers said they were forced to meet the prices of local jobbers and wholesale distributors. Most producers said they added 1 to 2 cents per lb. to the local jobber price because they offered better service and higher quality turkeys.

Turkeys were sold to wholesale distributors and jobbers in the fresh-dressed form only during the Thanksgiving and Christmas holidays. Producers said they added 1 to 3 cents per lb. to the market price as quoted in Urner-Barry or USDA price sources.

Methods of pricing to retail grocers varied widely. Producers selling fresh-dressed birds to grocers during the Thanksgiving and Christmas holidays usually determined wholesale prices by subtracting 5 to 13 cents per lb. from the retail price at the farm. The grocer usually then agreed to sell the birds for the retail price charged by the producer-processor at the farm. Producers selling frozen birds to grocers used Urner-Barry or similar price quotations plus 1 to 4 cents per lb. The grocer determined the price which he charged.

There were several exceptions but generally producers selling larger numbers of turkeys received lower prices than those selling smaller numbers. This was more true for birds under 17 lb. than for those of heavier weight.

Most retail sales were made during the Thanksgiving and Christmas seasons and were fresh-dressed birds. A small number of frozen birds were sold at retail on a year-round basis.

Twelve producers said they held their retail prices constant throughout the year. Three said their retail prices varied but, like wholesale prices, were usually higher during the holiday season. In determining retail prices, 3 to 19 cents was usually added to wholesale prices as quoted by Urner-Barry or USDA.

The volume of birds retailed averaged 2,790, with only two producers retailing more than 4,000 birds.

Prices charged by 11 producer-processors for further-processed or cut-up items are shown in Table 15. These prices were determined basically the same way as those for whole birds and were usually held constant throughout the year. All producers indicated that they made about the same profit on cut-up and/or further-processed items as they made on whole turkeys.

Comparison of Prices Received by Producer-Processors to Live Prices

Live weight equivalent prices were computed in an attempt to compare these prices with those received by producer-processors. The dressed prices were converted to live weight equivalent prices by charging the dressing cost per pound indicated earlier and assuming a 20% dressing loss. Thus, the dressing costs used were 3.01 cents per lb. (.80 x 3.76) live weight for fresh-dressed birds and 5.61 cents per lb. (.80 x 7.01) live weight for frozen birds. Live weight equivalent prices were then computed by taking 80% of the producer's price per pound and subtracting the above dressing costs from this value. The results for November and December 1966 are shown in Table 16.

TABLE 15.—Estimated Wholesale and Retail Prices of Cut-Up and/or Further-Processed Turkey, 11 Producer-Processors, 1966.

Item	Average Price per Pound	
	Retail	Wholesale
Breasts	$ .93	$ .80
Thighs	.42	.33
Giblets	.30	.24
Drumsticks	.27	.23
Wings	.25	.22
Necks	.21	.17
Backs	.18	.15
Rolls		
White, raw	1.22	.99
Mixed, raw	1.06	.91
Mixed, cooked	—	.98
Roasts		
White, cooked	—	1.58
Mixed, cooked	—	1.25
Smoked (whole)	.80	.80
Canned	1.05	.99
Cooked sandwich meat	1.10	—

Prices for fresh-dressed birds were generally substantially higher than for their live weight equivalent. Although the producers' average price per pound for frozen hens and toms was higher than the average live price, six producers were selling frozen turkeys for less than they could have received for them alive. This difference is undoubtedly explained by the relatively high prices during the 1966 holiday season. In addition, producer-processors usually hold prices nearly constant throughout the year and don't change prices from year to year as much as large processors. In a low live price year like 1967, prices for producer-processor turkeys were undoubtedly higher relative to live prices than during the relatively high price year of 1966.

GROUPINGS OF PRODUCER-PROCESSORS AND THEIR FUTURE PLANS

Each of the 17 operations differed somewhat from the other operations and a classification into similar groups was difficult. An attempt was made to divide the producers into similar groups by using the following classification system:

Class I. Producers processing less than 10,000 birds and freezing less than 50% of those processed.

TABLE 16.—Average and Range of Equivalent Live Prices per Pound Obtained by 17 Producer-Processors for Heavy Young Turkeys and Average and Range of Prices Paid at Farm, Ohio, November and December, 1966 (Cents per Pound).

	Equivalent Live Prices			
Form and Sex	Average Retail Price	Range of Retail Prices	Average Wholesale Price	Range of Wholesale Prices
Fresh Hens*	38.8	33.0-49.2	33.7	29.0-38.6
Fresh Toms*	34.0	28.2-42.6	29.5	25.0-33.8
Frozen Hens	—	—	31.1	26.4-36.0
Frozen Toms	—	—	26.9	22.4-32.8

	Prices Paid at Farm, Ohio†	
	Average	Range
Hens	27.5	24.0-30.0
Toms	24.5	22.5-27.5

*Any turkey weighing 17 lb. or under (eviscerated) was classified as a hen, any turkey over 17 lb was classified a tom.

†Source: Semi-Weekly Report, Poultry and Egg Products, Federal-State Market News Service, Columbus, Ohio, November 1 to December 22, 1966.

Class II. Producers processing 10,000 to 30,000 birds and freezing less than 50%.

Class III. Producers processing less than 10,000 birds and freezing 50% or more.

Class IV. Producers processing 10,000 to 30,000 birds and freezing 50% or more of those processed.

One producer processed more than 30,000 birds but his operation was so unlike any of the others that classification was difficult. Thus this operation is not included in the present discussion.

Class I

Turkey raising and processing was usually a complementary and/or supplementary enterprise for the four producers in this group. About 50% of their gross income was produced by turkeys. They had established a small fresh-dressed trade in their immediate community and sold most of their birds to individual consumers. A small percentage was sold frozen. Most of these were sold as factory gifts during the holiday season.

These producers had relatively low total investment costs in processing equipment and operated their processing plants 6 to 8 days before Thanksgiving and Christmas. Their low capacity utilization resulted in relatively high overhead costs per pound of turkey processed.

Producers in this group did not plan to expand their processing operation. All thought expansion by freezing and further processing would lower prices and increase costs. More detail on outlets is given in Table 17.

Class II

The five producers in this class had large turkey operations in addition to other large enterprises on their farms. They had either incorporated or were involved in some type of partnership which permitted large scale operations.

These producers had expanded the numbers of turkeys processed by increasing fresh-dressed sales to retail grocers and by expanding the numbers of birds frozen and further processed. More than half of the fresh-dressed birds were sold to retail grocers during the holidays. To supply this large quantity of fresh-dressed turkeys during a short period, these producers had larger and more mechanized processing plants and employed more people than any of the other three classification groups. Although they had higher investments in plant and equipment, overhead costs per pound in this group were lower than for those who processed fewer than 10,000 birds.

Sales of frozen and further-processed birds to retail grocers, restaurants, and institutions had increased. Most believed they could continue

TABLE 17.—Descriptive Items for Classes of Producer-Processors, Class Average for Each Item, 1966.

Item	Class I	Class II	Class III	Class IV
Stages of integration	5.3	6.2	7.0	5.5
Average age	57	51	53	50
Percentage of gross income from turkeys	52	63	82	81
Number of turkeys raised, 1966	5,960	21,100	11,000	29,500
Number of turkeys processed, 1966	4,750	21,100	4,670	19,500
Change in number processed, 1961-1966	+ 1,150	+ 7,200	— 2,035	+ 2,250
Number of other enterprises on farm	1.5	1.8	1.3	1.3
Investment in processing building (sq. ft.)	$ 2.55	$ 3.45	$ 3.98	$ 4.64
Total investment in equipment and building	$ 9,640	$32,400	$16,170	$15,330
Investment in freezing equipment	$ 6,000*	$15,600†	$ 6,000	$29,000
Dressing capacity per hour (hens and toms)	62	145	71	84
Percentage of total capacity utilized	5	24	13	33
Average number of people employed in plant	15	21	12	9
Average wage rates paid	$ 1.33	$ 1.47	$ 1.40	$ 1.37

*2 producers.
†3 producers.

to expand by increasing the numbers frozen and further processed. Three of the five producers planned to expand the number of birds processed by about 1000 per year; the other two planned to maintain about the same numbers processed. All had increasing labor costs and strong competition from larger processors limited their ability to expand indefinitely.

Class III

Two of the three producers in this group supplied hatching eggs to nearby hatcheries. This accounts for the wide difference between the number of turkeys raised and the number processed.

Two of them were processing fewer birds than formerly and thus had excess capacity in their plants. This resulted in increased overhead costs per pound. These producers were located near many small factories. They sold more than one-third of their birds as factory gifts (Table 18). However, the proportion sold as gifts was declining.

Most of the birds sold to factories and consumers were picked up at the processing plant and other outlets were nearby. So delivery costs for this group were low.

Because of the relatively small number of turkeys processed, all producers in this group indicated that they could no longer compete in the restaurant, institution, and gift markets. They continued processing operations because they had an established small market and a considerable investment in processing facilities. They planned to maintain their present level of operations until they could gradually phase out of processing.

TABLE 18.—Percentage of Dressed Turkeys Sold to Various Outlets, Percentage Frozen, and Percentage Cut-Up and/or Further-Processed, for Classes of Producer-Processors, Class Average for Each Percentage, and Average of 17 Producers, 1966.

Item	Class I	Class II	Class III	Class IV	17 Producers
Outlet:			(Percent)		
Consumer	40	21	28	15	14
Restaurant	3	4	11	16	17
Retail grocer	24	54	22	34	37
Institution	2	3	4	11	10
Gift	10	10	35	21	16
Wholesale distributor	21	8	0	3	6
Percentage frozen	16	23	58	72	49
Percentage cut-up and further-processed	4	14	12	8	12

Class IV

The four producers in this group raised an average of 30,000 turkeys, processed about 20,000, and sold the rest to larger processors. Turkeys were the main enterprise on these farms.

These producers froze about 72% of the turkeys processed and sold most of them throughout the year to restaurants, institutions, and retail grocers. Since frozen birds sold to these outlets do not require processing during the holiday season, the processing plants operated over a longer period, hired fewer people, and had smaller plants than their counterparts who were catering basically to the fresh-dressed market. This lowered their overhead costs per pound.

These producers processed more heavy toms than any of the others (25 to 30 lb. dressed weight). These birds were sold to restaurants and institutional outlets.

Their fresh-dressed sales were declining and they planned to freeze more birds in the future. Three producers planned to increase processing operations slightly and the other producer planned to decrease the number processed. Limiting factors were labor and strong competition from jobbers and larger processors.

The effects of the stronger price competition for frozen birds were reflected in slightly lower prices for producers who froze one-half or more of their birds than for those who froze less than one-half of their birds.

SUMMARY AND CONCLUSIONS

Factors Favoring Producer-Processing

Location—Thirteen producers were located near cities with large and rapidly growing populations. This created a large potential market. Nearness to market also lowered the delivery costs for producers delivering most of their birds.

Low Labor Costs—The total in-plant labor costs of producer-processors were about one-half the labor costs given for larger processors by Rogers and Rinear. These lower labor costs resulted from the lower wages paid by producers and from the fact that besides managing processing operations, producers and members of their family also worked as repairmen, salesmen, labor supervisors, and in similar administrative positions.

Processing, Packaging, Delivery Costs—About one-half of the dressed turkeys sold by the 17 producers were fresh-dressed. In-plant processing costs of fresh-dressed birds averaged 3.8 cents per lb. while processing costs of frozen birds averaged 7.0 cents per lb.

Packaging costs were higher for the frozen birds. Both the time involved in packing the bird and the cost of materials were higher.

More than one-half of the fresh-dressed turkeys were picked up by the purchaser at the producer's plant. The rest were delivered to nearby grocers and wholesale distributors. This resulted in low delivery costs for fresh-dressed compared to frozen birds.

Product Differentiation—Most sales by producer-processors resulted from buyers apparently believing these birds to be different from those they could normally obtain. Producers had established a reputation for selling a well-finished, well-dressed, high quality turkey and relied on this reputation for sales promotion. Sales costs, therefore, were low.

Most producers delivered turkeys weekly or semi-weekly to small restaurants, institutions, and grocers. Wholesale distributors and jobbers usually would not deliver the small number of birds required by these outlets. These producers were offering additional services and therefore also differentiated their product through service.

High Product Prices—Average wholesale and retail live equivalent prices for fresh and frozen processed turkeys were 2.4 to 11.3 cents per lb. higher than average live prices during the 1966 holiday season. Thus producers generally had increased their price-cost margins by processing their birds.

Factors Restricting Producer-Processing

Labor—All producers said they were having problems obtaining the quality and quantity of labor needed to efficiently operate their plants. Male labor was especially scarce.

Generally rising farm wage rates are likely to result in a reduction in their labor cost advantage.

Per Unit Fixed Costs—Large numbers of fresh-dressed birds were sold 2 to 3 days before Thanksgiving and Christmas. Thus, processing plant capacity and total investment in plant were more related to the number of birds sold during the holiday season than to total sales. Plant capacity per hour was high compared to the total number processed.

Additional Production Costs—Most producers processed their birds when they were 1 to 2 weeks older than those processed by larger processors. Since the age of turkeys is inversely related to feed conversion, processing older birds increased production costs.

Added Costs Associated with Freezing—In 1966, 49% of the dressed turkeys sold by the producer-processors were frozen. Fourteen of the 17 producers had increased the number and percentage of their turkeys frozen since 1961. Much of the expansion since 1961 had resulted from increased freezing.

The freezing and storage capacity necessary for year-round selling increased processing costs by about 1.5 cents per lb.

Price Competition—In sales to most restaurants, institutions, and factories, producer-processors had to compete with prices of local wholesale distributors and jobbers. Generally, as the number of turkeys sold to these outlets increased, the retail and wholesale prices decreased.

Not enough is known about attitudes of purchasers toward producer-processors to project probable future demand for this type of product.

Problems with Further Processing—All producers indicated a definite increase in the demand for cut-up and/or further-processed items. However, the lack of outlets for all parts of the turkey except breasts and rolls either restricted or completely prohibited sales of cut-up and/or further-processed items for 14 of the 17 producers. Unless demand changes for other parts, this limitation could put a damper on further expansion by producer-processors.

General Conclusions

Although most producers had expanded the number of turkeys processed since 1961, it cannot be assumed that this trend will continue.

The ultimate success or failure of the producer-processors will depend upon their ability to retain higher prices. Product differentiation, however, can be both a positive and negative factor. Some individual consumers, small restaurants, institutions, and grocers may consider the product of the producer-processors to be superior and worth its extra cost. However, others (particularly large chain grocers and restaurants) may consider this product inferior since the producer-processor is not under Federal inspection. Legislation which is aimed not specifically at the quality of the product of the producer-processor but at processing techniques could put serious limitations on producer-processing. Most producer-processors will likely fare better under an attitude of letting the quality of the product speak for itself rather than a determination of quality through regulation of specific steps in the processing operations.

To obtain satisfactory labor, producers may have to schedule processing operations around normal factory hours. This would permit employment of industrial workers during their free hours.

The future plans of the producer-processors included in this study generally concurred with the findings of this study. Their changes during recent years generally indicated an ability to adjust to new conditions.

Several alternatives existed for most of the producer-processors. Their continued operation of turkey processing facilities will depend upon demands for their product as well as their costs and willingness to shift to or put more emphasis on alternative employment.

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North Central Branch, Vickery, Erie County: 335 acres

Northwestern Branch, Hoytville, Wood County: 247 acres

Southeastern Branch, Carpenter, Meigs County: 330 acres

Southern Branch, Ripley, Brown County: 275 acres

Vegetable Crops Branch, Marietta, Washington County: 20 acres

Western Branch, South Charleston, Clark County: 428 acres